



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

DEC 2 2015

REPLY TO THE ATTENTION OF:

Dale Rich  
Regional Operations Director - Incinerators  
Stericycle, Inc.  
1907 Pine Avenue  
Warren, Ohio 44481

Dear Mr. Rich:

This letter is in response to the enclosed August 26, 2014, petition for other site-specific operating parameters to be used during startup and shutdown at the Stericycle, Inc. hospital medical and infectious waste incinerator (HMIWI) in Warren, Ohio (the Facility) that is subject to 40 C.F.R. Part 60, Subpart Ce "Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators." Subpart Ce includes references to provisions in 40 C.F.R. Part 60, Subpart Ec. Stericycle asked EPA to do three things at this HMIWI: 1) waive the performance test for shutdown and startup scenarios, 2) grant approval to operate under combustion control only when waste is not being charged into the incinerator, and 3) establish site specific operating parameters for the combustion control only scenario. Each of these items will be addressed in turn.

Stericycle does not need to submit a request for waiving the performance test for startup and shutdown scenarios because the Facility never needs to test the unit under start-up, shutdown, and malfunction conditions per 40 C.F.R. § 60.8(c). Stericycle can operate under the combustion control only scenario during startup and shutdown when waste is not being charged into the incinerator as long as the Facility meets the required emissions limits in the regulations.

Stericycle proposed some operating parameters for the combustion control only scenario. Instead of the proposed parameters, EPA would like Stericycle to use a version of the required parameters in the regulations at 40 C.F.R. Part 62 Subpart HHH Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed on or before December 1, 2008 Table 3. Table 3 lists Maximum Charge Rate and Minimum Secondary Chamber Temperature as the required parameters to be monitored under the combustion control only scenario. EPA understands and agrees that during startup and shutdown the Maximum Charge Rate will be zero and that is what should be recorded. Instead of recording the Minimum Secondary Chamber Temperature during startup and shutdown, EPA finds that Stericycle should record the chamber temperature once per minute during startup and shutdown to demonstrate that the temperature is increasing (startup condition) or decreasing (shutdown condition).

If you have any questions concerning the determination provided in this letter, please contact Ms. Jennifer Wilson of my staff at (312) 353-3115.

Sincerely,

A handwritten signature in black ink that reads "Sara Breneman". The script is cursive and fluid, with the first name "Sara" being more prominent than the last name "Breneman".

Sara Breneman

Chief

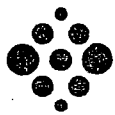
Air Enforcement and Compliance Assurance Branch

Enclosure

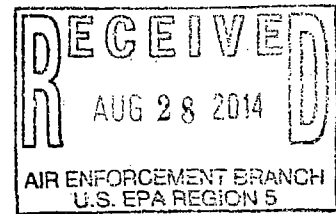
cc: Robert Hodanbosi  
Ohio Environmental Protection Agency

Ed Fasko  
Ohio Environmental Protection Agency  
Northeastern District Office

Lindsey Kroos  
ALL4 Inc.



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August 26, 2014

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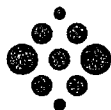
Mr. George Czerniak  
United States Environmental Protection Agency  
Region 5  
Director, Air and Radiation Division  
77 W. Jackson Blvd. (A-18J)  
Chicago, IL 60604

**RE: Petition for the Identification of Alternate Control Scenario, Waiver of Performance Testing, and Establishment of Site-Specific Operating Parameters Pursuant to 40 C.F.R. Part 62, Subpart HHH for the Stericycle Warren, OH Facility  
Title V Operating Permit No.: P0086292**

Dear Mr. Czerniak:

Stericycle, Inc. (Stericycle) owns and operates a hospital, medical, and infectious waste incinerator (HMIWI) facility in Warren, Ohio (Warren Facility) and operates pursuant to Title V Operating Permit (TVOP) No. P0086292 issued by the Ohio Environmental Protection Agency (OEPA). The Warren Facility is subject to Ohio's OAC 3745-75 (Infectious Waste Incinerator Limitations), which implements the requirements of 40 C.F.R. Part 60, Subpart Ce (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators). U.S. EPA promulgated amendments to 40 C.F.R. Part 60, Subpart Ce on October 6, 2009 that, among other requirements, contain more stringent emission limitations. However, Ohio elected not to amend OAC 3745-75; therefore, the Warren Facility is subject to 40 C.F.R. Part 62, Subpart HHH (Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed on or Before December 1, 2008) pursuant to §62.14400(a).

Stericycle proposes to use two different control configurations/schemes as defined in §62.14453 and §62.14455 to demonstrate compliance with the new HMIWI emission limits. Control Scheme 1 is a "wet scrubber system followed by a carbon bed with selective non-catalytic reduction (SNCR)" control scenario to be utilized during the time period that the HMIWI is in operation (as defined in §62.14490). Control Scheme 2 would be a "combustion control only" scenario to be utilized during startup and shutdown (as defined in §62.14490) when waste is not being



combusted in the HMIWI. The purpose of this submittal is to: (1) define the second control scheme during startup and shutdown (Control Scheme 2), (2) request that the Administrator waive the performance testing requirements for Control Scheme 2, and (3) identify the compliance strategy and associated monitoring, recordkeeping, and reporting to be followed during Control Scheme 2.

Since Stericycle is proposing monitoring, recordkeeping, and reporting other than those specifically outlined in 40 C.F.R. Part 62, Subpart HHH, §62.14495(b) through (e), requires Stericycle to petition for the approval of alternative methods of demonstrating compliance, approval of major alternatives to monitoring, a waiver of recordkeeping requirements, and a waiver of performance testing. This letter serves as Stericycle's petition.

Provided below is a process description and a summary of the proposed Control Scheme 2 compliance strategy for the Stericycle facility.

### **Process Description**

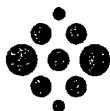
Stericycle operates an existing HMIWI at its Warren Facility. The HMIWI uses a two (2) stage combustion system. Material is fed into the primary stage via a dual door ram feed system. Both the primary and secondary chamber temperatures are monitored and recorded. Natural gas burners are utilized to preheat the combustion chambers and maintain temperature in the respective chambers.

The exhaust gases exit the secondary chamber and reagent from the SNCR system is injected prior to entering a quench tower where they are cooled via a combination of freshwater and re-circulated spray. The quenched gases then pass through the condensing absorber, venturi scrubber, final demister, and carbon beds for removal of pollutants. The condensing absorber scrubber liquor pH is controlled via sodium hydroxide addition to neutralize absorbed acid gases. Exhaust gases are then vented to the atmosphere via a dedicated stack.

### **Compliance Strategy**

Pursuant to §62.14495, Stericycle is submitting this petition to the Administrator for the following approvals:

1. Pursuant to §62.14453, Stericycle is seeking approval to operate under Control Scheme 2 – “combustion control only” during periods of startup and shutdown.
2. Under 40 C.F.R. §60.8(c), “[p]erformance tests shall be conducted ... based on representative performance of the affected facility” and “[o]perations during periods of startup [and] shutdown ... shall not constitute representative



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Mr. George Czerniak  
U.S. EPA, Region 5  
Petition for the Identification of Alternate Control Scenario  
August 26, 2014

conditions for the purpose of a performance test ...." Startup and shutdown conditions for the HMIWI are not representative of normal operating conditions. The purpose of startup is to sufficiently prepare the HMIWI and associated equipment to *begin* accepting waste and the purpose of shutdown is to sufficiently cool down the HMIWI and associated equipment for idling. Pursuant to §62.14495(e), Stericycle requests that the Administrator waive the performance testing requirements for Control Scheme 2 as both §60.8(c) and §62.14452(a) specify that the testing should be conducted under "representative operating conditions". Under 40 C.F.R. §60.8(b), the Administrator may waive the requirement for performance tests if the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard. Stericycle's request for the performance test waiver is based on the following rationale:

- a. During the use of Control Scheme 2 only natural gas is fired in the HMIWI and no waste is being charged.
- b. EPA has approved for another facility subject to the HMIWI regulations a similar performance test waiver based on data that includes AP-42 emission factors, operational data, and CEMS data (Attachment 1). This data and submission establishes that emissions from the combustion of natural gas in a HMIWI unit will achieve compliance with the emission limitations of 40 C.F.R. 62, Subpart HHH. The same principles apply to Stericycle's operation and we incorporate that justification here. This makes sense because no waste is actually being processed during this control configuration—with waste combustion emissions being the target of the HMIWI regulations—and only natural gas is being combusted.

Accordingly, Stericycle requests a waiver from the performance testing requirement during Control Scheme 2.

3. Since the regulations prohibit conducting a performance test under Control Scheme 2, Stericycle hereby petitions the Administrator to establish site-specific operating parameters pursuant to §62.14495(c). Stericycle is required to petition the Administrator to establish alternative site-specific operating parameters during the initial performance test that will be monitored continuously thereafter. Under 40 C.F.R. §62.14453, sources must monitor parameters established in Table 3 for the different control scenarios as well as establish minimum and maximum operating parameter limits (on a 3-hr rolling average basis) based on the initial performance test. Under the "combustion control only" scenario, Table 3 requires the maximum waste charge rate be monitored once per charge and the minimum secondary chamber temperature be monitored continuously (i.e., once per minute).

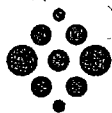


Stericycle's Control Scheme 2 (combustion control only) accounts for periods of startup and shutdown only. During Control Scheme 2, no waste is being charged to the HMIWI and the secondary chamber temperature is gradually increasing or decreasing while bringing the HMIWI on-line or off-line, respectively, so as to prevent damage to the HMIWI and/or the associated air pollution control equipment. An appropriate minimum secondary chamber temperature and maximum waste charge rate cannot be established during Control Scheme 2 based on the following reasoning: (1) the secondary chamber temperature is gradually increasing or decreasing (over many hours) in some cases starting from ambient temperature up to the target values of 1600-1800 deg F; (2) waste is not being charged during this scenario (i.e., the waste charge rate is zero pounds/hour); and (3) Stericycle has requested a waiver from the performance testing during Control Scheme 2 which would establish these parameter values (i.e., only natural gas is combusted during startup and shutdown).

Accordingly, Stericycle has carefully considered Control Scheme 2 and evaluated potential continuous monitoring provisions. Stericycle considered the operation of the unit during Control Scheme 2 - natural gas combustion with the burners operating at a total capacity of approximately 8 MMBtu/hr and reviewed similar combustion-related standards. After this review, Stericycle proposes the following work practice standards to be followed during Control Scheme 2:

- a. Stericycle will monitor that there is only use of natural gas or propane during Control Scheme 2. 40 C.F.R. §62.14454(c) and §62.14495(c)
- b. Stericycle will record the type and amount of natural gas or propane used by the HMIWI. 40 C.F.R. §62.14460(b)(16)
- c. Stericycle will report the type and amount of natural gas or propane used by the HMIWI for each semi-annual period. 40 C.F.R. §62.14463(a)(2)

Stericycle developed this petition and approach after conferring with representatives of U.S. EPA's Office of Air Quality Planning & Standards, Office of General Counsel, and Office of Enforcement & Compliance Assurance, as well as Regional Office staff. Stericycle requests that EPA timely process this petition to ensure that it is approved prior to October 6, 2014, the date by which a performance test would otherwise be required by the rules to the extent that they apply during startup and shutdown. Stericycle is pleased to answer any questions regarding this petition and will work with OEPA to incorporate the alternate control scenario into the facility's Title V Operating Permit.



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Mr. George Czerniak

U.S. EPA, Region 5

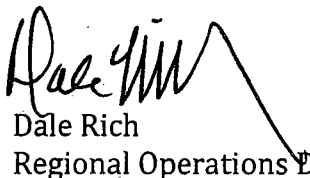
Petition for the Identification of Alternate Control Scenario

August 26, 2014

Please feel free to contact Al Burson at (847) 370-7995 if you have questions regarding this submittal.

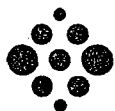
Sincerely,

**Stericycle, Inc.**



Dale Rich  
Regional Operations Director – Incinerators

cc: Jennifer Wilson – U.S. EPA Region 5  
Corey Kurjian – OEPA  
Al Burson – Stericycle  
Steve Pantano – Stericycle  
Don Nuss – Stericycle  
Bill Straub, P.E. – ALL4



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**Attachment 1 – Merck Emissions Data**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

Stacey L. Starkman, Director  
Merck West Point Safety & Environment  
770 Sumneytown Pike  
P.O. Box 4  
WP20-205  
West Point, PA 19486

JUL 22 2014

Dear Ms. Starkman:

This is in response to your January 17, 2014 letter requesting the U.S. Environmental Protection Agency's (EPA's) approval of performance test waiver requests and a proposed site specific monitoring plan under the federal plan for hospital/medical/infectious waste incineration (HMIWI) units.

Merck Sharp & Dohme Corp. (Merck) owns and operates two large HMIWI units at its West Point facility in Pennsylvania. The two HMIWI units are undergoing modifications in order to comply with the federal plan requirements in 40 CFR part 62, subpart HHH (federal plan, or subpart HHH) for existing HMIWI units applicable in Pennsylvania due to the absence of an EPA approved state plan implementing the 2009 emissions guidelines at 40 CFR part 60, subpart Ce. In order to comply with subpart HHH, Merck is proposing two different control scheme options for each unit: one while only natural gas is being fired and one during "normal" operation. The first control scheme proposed to comply with the emissions limits using the "combustion control only" requirements as described in subpart HHH. The second control scheme would use either a dry scrubber, fabric filter, wet scrubber combination, or a dry scrubber followed by a fabric filter, depending on the unit.

Merck is requesting waivers from performance tests required by the Performance Testing and Monitoring Requirements of subpart HHH. The federal plan requires that initial performance tests be performed to demonstrate compliance and to establish operating parameters. However, 40 CFR §60.8(b) allows the EPA to waive the requirement for performance tests if the owner or operator demonstrates by other means that the source is in compliance with the standard. Merck relied on AP-42 factors, operational data, and CEMS data to make this demonstration, and also proposed specific parameters to be monitored for periods where only natural gas is being fired. Merck did not request performance test waivers or request approval of site specific operating parameters for periods where waste is being charged to the unit(s).

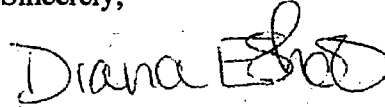
EPA has determined that Merck has adequately demonstrated that the HMIWI units can comply with the emissions limits in subpart HHH when no waste is being charged to the chamber and while firing natural gas. Therefore, EPA approves Merck's request for waivers of stack test requirements during the "combustion control only" scenario outlined by Merck in its letter to EPA. EPA encourages



Merck to work with the Pennsylvania Department of Environmental Protection to ensure that operational scenarios where Merck is proposing to use the combustion control only option are adequately reflected in the title V operating permit.

If you have any additional questions, please contact Mr. Brian Rehn, at 215-814-2176, or Mr. Mike Gordon, at 215-814-2039.

Sincerely,

A handwritten signature in black ink that reads "Diana Esher". The signature is fluid and cursive, with the first name "Diana" written in a larger, more prominent script than the last name "Esher".

Diana Esher, Director  
Air Protection Division



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Table 3.  
Merck & Co.  
WHI Emissions During Startup  
Comparison of CEMS Data to Emission Limits

Startup Date	Flow	Flow (average)	CO		SO <sub>2</sub>		NO <sub>x</sub>		HCl	
	(average)		(max 12-hr value during startup)	(average during startup)	(max 12-hr value during startup)	(average during startup)	(max 12-hr value during startup)	(average during startup)	(max 12-hr value during startup)	(average during startup)
	(scfm)	Average O <sub>2</sub>	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )	(ppmdv, @ 7% O <sub>2</sub> )
Subpart HHH Emission Limit (12-hour rolling average if CEMS, 3-hour average if manual)			11		9		140		6.6	
Apr 15/16, 2013	8,784.8	10.96	10.8	6.7	1.8	1.8	73.2	64.7	0.1	0.1
Feb 22 /23, 2011	6,302.4	9.06	5.1	3.4	0.1	0.1	59.8	53.4	0.04	0.03
Apr 27, 2011	7,028.0	10.70	N/A	4.0	N/A	0.7	N/A	44.0	N/A	0.00
Jan 2, 2014	5,509.0	13.20	N/A	3.1	N/A	0.01	N/A	49.9	N/A	3.2
<b>Average</b>			<b>8.0</b>	<b>4.3</b>	<b>1.0</b>	<b>0.7</b>	<b>66.5</b>	<b>53.0</b>	<b>0.1</b>	<b>0.8</b>
<b>Below Emission Limit?</b>			<b>Yes</b>		<b>Yes</b>		<b>Yes</b>		<b>Yes</b>	

Emissions data for illustrative purposes only during combustion only controls scenario.  
CEMS data is coded as down since the unit has not charged waste to the incinerator and is not currently required to be reported.

**Table 4.**  
**Merck & Co.**  
**WHI Emissions During Startup**  
**Comparison of AP-42 Data to Emission Limits**

Pollutant	AP-42 Emission Factor <sup>(a)</sup> (lb/MMSCF NG)	Calculated Emissions (lb/hr)	Calculated Concentration In Flue Gas	Units (7% O2)	Emission Limit	Units (7% O2)	Calculated Emissions < Emission Limit?	Comments
CO	84	1.48	68.3	ppmdv	11	ppmdv	No	See Table 3, CO CEMS data.
SO2	0.600	0.01	0.1	ppmdv	9	ppmdv	Yes	
NOx (as NO2)	100	1.76	47.4	ppmdv	140	ppmdv	Yes	
HCl	N/A	N/A	N/A	ppmdv	6.6	ppmdv	N/A	See Table 3, HCl CEMS data.
PM	7.6	0.13	3.14E-03	gr/dscf	0.011	gr/dscf	Yes	
D/F	N/A	N/A	N/A	gr/dscf	4.1	gr/10^3 dscf	N/A	
Pb	0.0005	8.80E-06	2.07E-04	gr/dscf	0.016	gr/10^3 dscf	Yes	
Cd	0.0011	1.94E-05	4.55E-04	gr/dscf	0.004	gr/10^3 dscf	Yes	
Hg	0.00026	4.58E-06	1.08E-04	gr/dscf	0.0079	gr/10^3 dscf	Yes	

**Conversion Factors/Variables**

Factor/Variable	Value	Units
Average Startup flow	4964.8	dscfm at 7% O2
WHI Combustion	0.0176	MMscf/hr
Molecular Weight - CO	28	lb/lb mol
Molecular Weight - SO2	96.0	lb/lb mol
Molecular Weight - NO2	48	lb/lb mol
	60	min/hr
	7,000	gr/lb
	385.35	scf/lb-mol